BESELER

T-16-8-D

SHRINK TUNNEL
INSTRUCTION MANUAL

CHARLES BESELER COMPANY

SHRINK PACKAGING MACHINERY DIVISION

1600 LOWER ROAD

LINDEN, NEW JERSEY 07860

INTRODUCTION

Congratulations on the receipt of your new Beseler Mini Shrink Tunnel. This compact tunnel combines the best features available in shrink packaging machinery. Among them are extra long life tubular cal rod heaters and a variable speed conveyor belt. These tubular heaters can produce adjustable tunnel temperatures up to 400° F. (204° C), thereby allowing to be done with most shrinkable films.

Your Mini Shrink Tunnel has met Beseler's strict standards of quality prior to leaving the factory. The unit is simple to operate and requires very little maintenance. However, we at Beseler, caution you, your operating and maintenance personnel not to attempt to install, adjust or operate the Mini Tunnel without first reading the contents of this manual. You can be assured that this machine will provide exceptional service for many years when operated properly and if appropriate care is maintained.

Upon receipt, remove the tunnel from the shipping packaging and inspect for possible damage. If any damage is noted, contact the delivery carrier immediately, regardless of the external condition of the packaging. Do nothing further until the carrier's agent has made an inspection and evaluation (if necessary) of the damage to the unit. Also, do not destroy packaging materials or boxes until the carrier's agent has examined them. If no damage is evident, proceed with the installation. If installing the machine onto the optional leg kit, two people would be required. First stand the legs on the floor with the leveling bolts located at the outer corners. (The legs may lean inward slightly) Then with the help of others, lift the tunnel up and place it gently on top of the legs. With one person holding the machine stable on the legs, the other can install the three retaining bolts and washers to mount the leg. NOTE; DO NOT TIGHTEN ANY BOLTS UNTIL ALL BOLTS ARE STARTED IN THE THREADS. Once all the bolts are started, then you can lift the tunnel slightly and move the bottoms of the legs closer together until they are completely vertical. Now you can tighten the bolts the final stage and your ready to go.

SPECIFICATIONS

POWER REQUIREMENTS ---------- 220 VOLT AC single phase
CURRENT RATING ---------- 25 AMP 60 HZ
HEATER POWER ------- CAL RODS (3) ---------- 1500 WATTS EA.
ADJUSTABLE BELT SPEED ------- 0 – 30 FT PER MIN/ 0 – 9.14 METERS/PM
MAXIMUM PACKAGE SIZE — Width ----------15 INCHES
Height ---------- 7 INCHES
OVERALL CONVEYOR LENGTH ---------- 33 INCHES

ELECTRICAL CONNECTIONS:

Before attempting to connect your BESELER unit to a source of electric current, make sure the voltage and amperage to be supplied to the unit is in agreement with the specifications listed on the serial number label on the side of the unit. If the voltage and amperage are correct, then connect them to the machine.

CAUTION: EXCESSIVE VOLTAGE MAY DAMAGE TRANSFORMERS,RELAYS,TIMERS AND HEATERS WHICH WILL VOID THE WARRENTY. INADEQUATE AMPERAGE CAN OVERLOAD ELECTRICAL CIRCUITS CAUSING FUSES OR BREAKERS TO OPEN.

AIR FLOW:

Airflow is the least understood of the three tunnel adjustments yet is the most useful for odd shaped and difficult applications. Shrink film absorbs temperature from the air stream around it but is insulated by the product it contacts. For instance a plastic ice cube tray has many open areas where the film does not contact the product. Those areas will shrink faster and absorb more heat than the areas in contact with the sides and the bottom of the product. The "exposed" film will burn through if the same airflow and temperature is applied as the non-exposed film. You cannot adjust the temperature in specific areas but you can direct the airflow as needed in a Beseler tunnels. You can close off the damper on any Beseler to limit the airflow to the top of this product and protect the exposed film, while redirecting more flow to the sides and bottom.

Shrink film balloons up when heat is applied and then as it absorbs heat it begins to shrink down. As the film absorbs the heat away from the air contacting the film the air cools. This cool air will cling to the film surface and the shrink will stop if the cool air is not replaced with more heated air. This is why good tunnels have good airflow (heat) to all sides of the product. The blowers move the cooled air off of the film and replace it constantly with more heat so the shrink process continues. Many shrink films will not start to shrink again once the process has stopped. Good airflow is critical!

Airflow adjustments are your fine tuning tools for the particular product and film you are working with. They allow you to work with parts of the product rather than making changes which will effect the entire products appearance.

PERIODIC MAINTANENCE:

Conveyor belts should be checked for areas of normal wear and inlet screens should be kept clear of dust and film particles which can reduce tunnel performance and cause overheating internally. NOTE: airflow restriction can cause internal overheating and seem to not be hot enough by way of poor shrink performance.

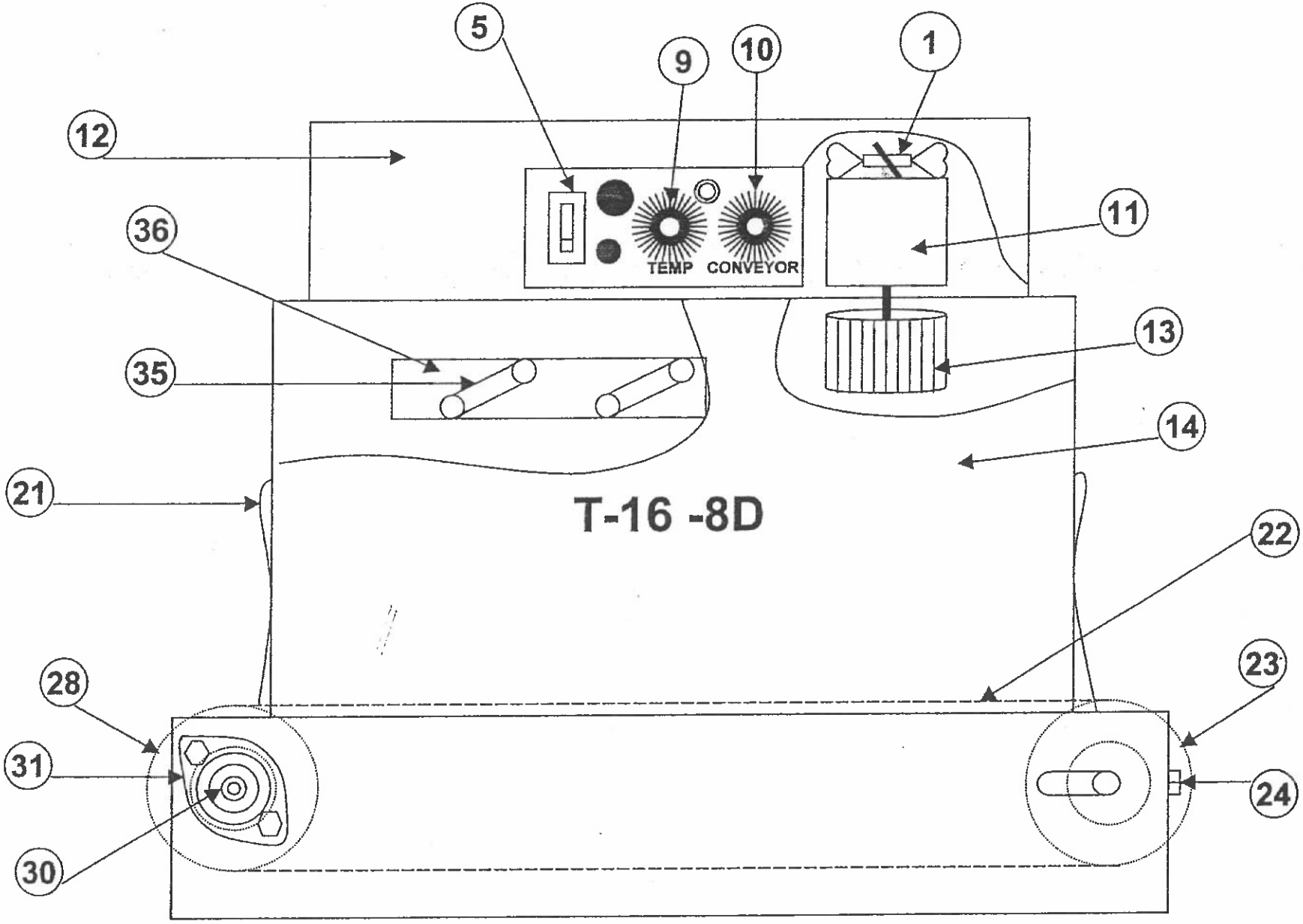
BELT SPEED

Belt speed is often not coordinated with production speeds. When shrink film shrinks down too fast it can catch on the edges of the product and create "crows feet" and large "dog ears". Often you find a customer running the belt near full speed and with the temp turned way up. This is required if you are running products that fast but the best looking products will be produced with the temperatures within the film operating range and the belt speed as slow as possible. The longer a product is in the heat stream the better it will look. Slow shrink allows the film to slip over the products edges and pull it tight!

IN SUMMARY

Set temp within the films operating range, airflow on full, belt speed in the middle range and test several products.

If you find:
Fish eyes = turn up the temperature
Crows feet = slow down the conveyor belt speed
Dog ears = direct the air flow to the effected area and slow down conveyor
Clouded areas = speed up the belt or redirect/decrease the airflow


5
9
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1
12
11
36
TEMP
CONVEYOR
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35
14
21
T-16 -8D
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24
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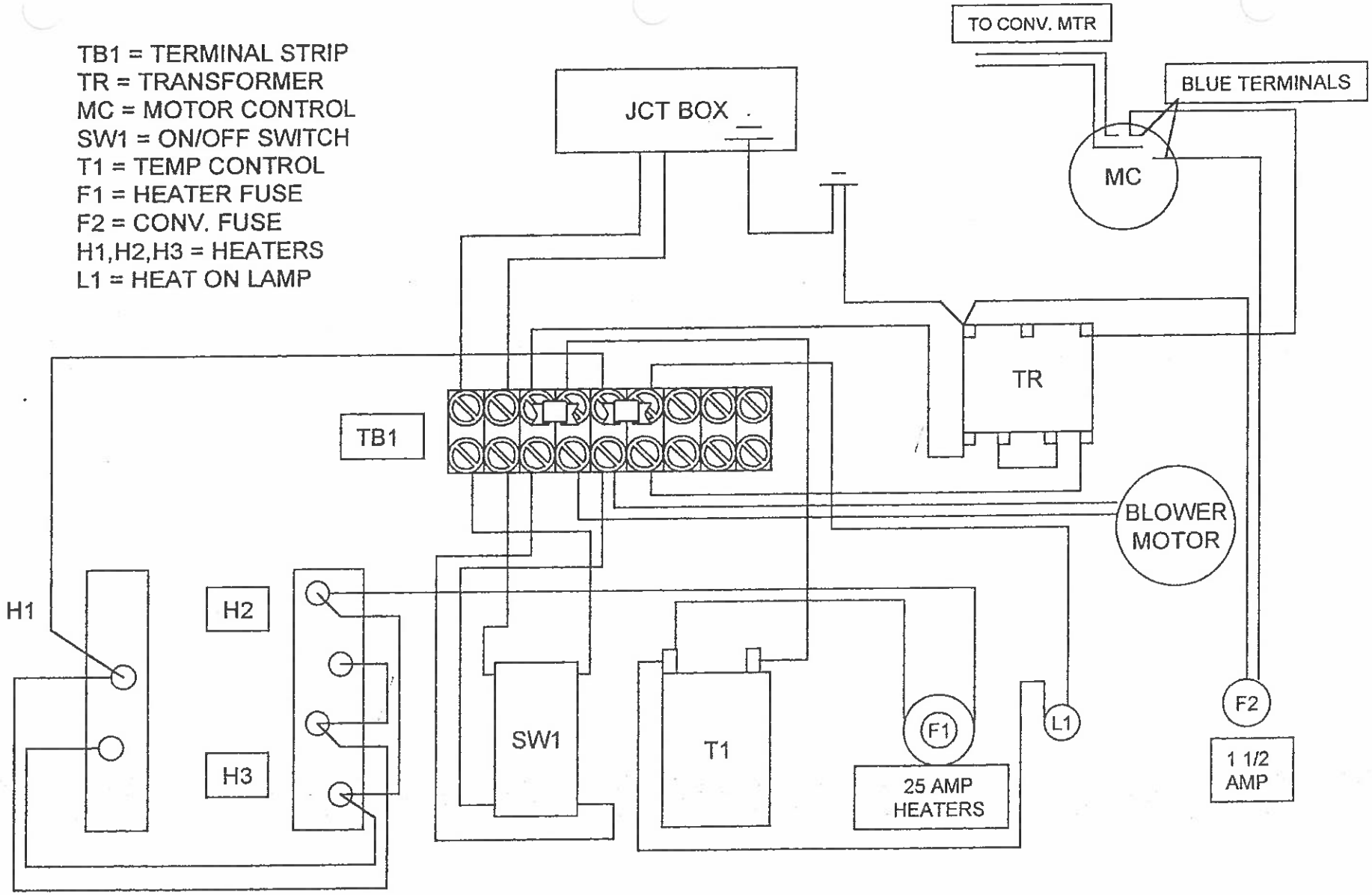
BESELER PARTS LISTING

T-16-8 TUNNELS

REF #	DISCRIPTION	PART NUMBER
1.	COOLING FAN	620-42-05
2.	TERMINAL STRIP	600-50-10
3.	WIRE, HIGH TEMP TO HEATERS AND MOTOR—(PER FOOT)	605-12-02
	TERMINAL ENDS FOR HIGH TEMP WIRE	600-40-42
5.	ON/OFF SWITCH	610-10-31
6.	FUSE 1.5 AMP	600-62-27
7.	FUSE HOLDER WITH FUSE	600-27-07
7a	FUSE HOLDER CAP	600-60-07-04
8.	LIGHT, HEAT ON INDICATOR	625-60-25
9.	THERMOSTAT W/PROBE	610-22-09
10.	SPEED CONTROL FOR CONVEYOR BELT	660-40-17
11	BLOWER MOTOR—W/BUSHING	615-22-36
12.	TOP OUTER COVER	10-54285
13.	BLOWER FAN WHEEL	620-52-05
14.	PANELS FRONT OUTER	
	REAR OUTER	10-40570
17.	SCREWS, CURTAIN BRACKET MOUNTING	
18.	CURTAIN BRACKET PLATES	10-54283
18a	END COVER, OVER CURTAINS	10-19700
19.	SCREWS , CURTAIN PANEL MOUNTING LOWER	10-54284
20.	BRACKET, THERMOSTAT PROBE MOUNT	600-54-01
21.	CURTAINS 3@ SIDE	
22.	CONVERYOR BELT W/LACING AND CONNECTOR ROD	10-19693
	TRACKING FLANGE FOR CONVEYOR BELT	10-54276
23.	IDLER ROLLER	10-19690-02
24.	BOLTS, BELT TENSION ADJUSTMENT	540-47-03
25.	SPRINGS, ON TENSIONER BOLTS	562-72-52
26.	TRACKING FLANGE, CONVEYOR BELT TRACKING GUIDE RAIL	
27.	RUBBER FEET, (4)	570-40-13
28.	DRIVE ROLLER	10-19689-02
29.	LAG TAPE 3 REQUIRED TWO ON IDLER/ONE ON DRIVE	573-63-01-260
30.	BEARING, DRIVE ROLLER	560-70-10-01
31.	FLANGE, BEARING HOLER 2 REQUIRED	560-70-10-02
33.	INSULATION, PANELS (2 REQUIRED MUST BE CUT TO FIT)	500-81-58-01
34.	BRACKET, MAIN HEATER MOUNTING	
35.	HEATER ELEMENT (3) 1500 WATT	640-60-62
36.	INSULATOR BLOCK, MAIN HEATER MOUNTING	10-19670
37.	HEATER MOUNTING CLAMP	600-92-03
37.	SPROCKET, ON DRIVE ROLLER	10-19963
38.	CHAIN, CONVEYOR DRIVE	10-19723
39.	PLATE, MOTOR MOUNTING	10-19685
40.	MOTOR, CONVEYOR (SPROCKET NOT INCLUDED)	615-42-21
41.	BRUSHES, CONVEYOR MOTORS...ALWAYS REPLACE BOTH BRUSHES, & BRUSH HOLDERS. CAPS ARE NOT SOLD SEPERATELY(PART OF MOTOR) GLEASON/AVERY BRUSHES INCLUDE SPRING/HOLDER	640-45-07-03
42.	SPROCKET, ON CONVEYOR MOTOR	10-19687



T-16-8 Wiring Diagram

LIMITED WARRANTY

Charles Beseler Co. warrants each machine (with the exception of sealing wires, teflon tape, rubber pads and conveyor belts) to the original purchaser only, to be free from defects in materials and workmanship for a period of one year from the date of purchase from an authorized Beseler dealer.

This warranty does not apply to equipment showing evidence of accidental damage, misuse or abuse, or which has been tampered with or repaired by persons other than authorized Beseler personnel.

Beseler's sole obligation under this warranty shall be to repair or replace (at Beseler's option) the defective part of the merchandise. Returns for servicing should be made to your Beseler dealer. If it is necessary for the dealer to return the machine or part to Beseler, transportation expenses to and from Beseler are payable by the purchaser and Beseler is not responsible for damage in shipment.

The purchaser must give immediate notice to Beseler's authorized dealer from whom the product was purchased in the event the product shall be found to be defective.

THIS WARRANTY IS IN LIEU OF ALL OTHERS EXPRESSED OR IMPLIED, INCLUDING WARRANTIES AS TO FITNESS FOR USE AND OF MERCHANTABILITY except as may be mandated by statute or rule of law. Any implied warranties of fitness for use, or merchantability, that may be created by operation of law are limited to the one year warranty period. NO LIABILITY IS ASSUMED FOR EXPENSES OR DAMAGES RESULTING FROM INTERRUPTION IN OPERATION OF EQUIPMENT OR FOR INCIDENTAL, DIRECT OR CONSEQUENTIAL DAMAGES OF ANY NATURE. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives the purchaser specific legal rights and you may also have other rights which vary from state to state. The purchaser may also have implied warranty rights. In the event of a problem with warranty service or performance, the purchaser may be able to go to a Small Claims Court, a State Court, or a Federal District Court.

CHARLES BESELER CO.
PACKAGING EQUIPMENT
1600 LOWER ROAD
LINDEN, NEW JERSEY 07036